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APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
10-070,321	03/01/2002	Hitoshi Matsumoto	1576.98	4553

7590 06/04/2003

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EXAMINER

ASINOVSKY, OLGA

ART UNIT	PAPER NUMBER
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1711

8

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,321

Applicant(s)

MATSUMOTO ET AL.

Examiner

Olga Asinovsky

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 01 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al U.S. Patent 6,365,321.

The present invention is an alkenylphenol copolymer comprising a Component (A) containing a repeating unit represented by Formula (I) and a repeating unit represented by Formula (II) and Component (B) containing a repeating unit represented by Formula (III), wherein Components (A) and (B) are bound in block in the form of (A)-(B), having a ratio Mw/Mn in a range of 1.00 and 1.5, and a said block has no carboxylic acid residues. Wherein the unit of Formula (I) is

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alkenylphenol, unit of Formula (II) is alkenylphenol having a protected hydroxyl group, and unit of Formula (III) is a t-butyl (meth)acrylate.

Chen discloses a binder composition comprising a homogeneous blend of (i) a hydroxystyrene copolymer comprising a first monomer that is a substituted or unsubstituted hydroxystyrene and a second monomer containing a photoacid-cleavable alicyclic ester group, and (ii) a phenolic polymer, claim 1 at column 13, column 2, lines 20-27 and column 4, lines 5-33. The hydroxystyrene copolymer such as hydroxystyrene/acrylate or methacrylate copolymer can be a block copolymer, column 6, lines 1-2, 7 and 15-16. The hydroxystyrene copolymer represented by the formula (I) at column 4 would be readable in applicants' claimed components represented by the Formula (I) and Formula (III). The hydroxystyrene copolymer can be prepared at an elevated temperature of about 50 C to 100 C, column 6, line 7, preferably at 60 C, column 12, line 12, example 1, for the present claims 4 and 6. A phenolic polymer (ii) can be partially or wholly protected, abstract, and column 7, lines 1-15. The phenolic polymers include poly(hydroxystyrene-co-styrene), poly(hydroxystyrene-co-styrene-co-t-butyl acrylate), and novolac, column 6, lines 19-67 and column 7, lines 1-20. The component of the formula (II) at column 4, line 25 would be readable in applicants' claimed component represented by the Formula (II). Reference discloses that the phenolic polymers with narrow molecular weight distributions are prepared by living anionic polymerization or living radical polymerization, and the phenolic polymers can be block polymers, column 7, lines 17-20, for present

claims 1, 3 and 5. Chen discloses a homogeneous blend of a hydroxystyrene copolymer and a phenolic polymer. There is no free carboxylic acid group in the formulation of a said homogeneous blend, for the present claim 1. Chen does not disclose a weight-average molecular weight of the blends of hydroxystyrene polymers for the present claim 2. However, a molecular weight of at least 1,000 in the present claim 2 would be inherent in Chen invention because the polymerization processes for the hydroxystyrene copolymer and the phenolic polymer are controlled by the desired characteristics of the obtained homogeneous blends of hydroxystyrene polymers.

3. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by JP 10-168132.

JP 10-168132 discloses an alkenylphenol-based copolymer having narrow distribution and its production. An alkenylphenol copolymer is a block copolymer having a single peak and a narrow molecular weight distribution. The alkenylphenol copolymer comprises: a compound of formula I which is a hydroxyl group protected phenol compound with a saturated aliphatic protecting group and a copolymerizable (meth)acrylic acid alkyl ester of formula II (abstract and claim 1), for the present claim 1. A process that includes several steps of the subsequent copolymerization of additional polymerizable comonomers produces the alkenylphenol copolymer. The obtained copolymer has a number average molecular weight of 1000-50,000 and a ratio of M_w/M_n is 1.00-1.50, for the

present claims 1 and 2. The obtained alkenylphenol copolymer has no carboxylic acid residue (abstract and claim 1).

Claim Rejections - 35 USC § 112

1. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "characterized" in claim 1, line 1 makes the invention indefinite since the term characterized fails to properly introduce what is being claimed. The proper transition phrase for introducing the claimed components is "comprising, consisting essentially and consisting". The two claim language "characterized" and "consists" for an alkenylphenol copolymer makes an alkenylphenol copolymer indefinite.

A process for the preparation of the alkenylphenol copolymer in claim 3 and claim 5 is indefinite because it is not clear a step of producing a hydroxy group protected phenolic monomer unit since a phenol unit is not present.

The brackets in claims 1, 3 and 5 should be removed.

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art is relevant to show the state of the art knowledge.
- 3.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olga Asinovsky whose telephone number is 703-308-0041. The examiner can normally be reached on 9:00 to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 703-308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

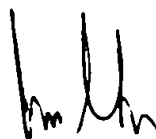
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

O.A.

O.A.

June 1, 2003

Olga Asinovsky
Examiner
Art Unit 1711



James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700